

**WHAT IS CLAIMED IS:**

1. A method of discovering Cisco Discovery Protocol (CDP) nodes in a network in real time comprising:
  - transmitting a signal from a network manager to a first CDP node of the network, wherein the signal requests information regarding additional CDP nodes known to the first CDP node;
  - receiving a response that identifies the additional CDP nodes known to the first CDP node;
  - repeating the transmitting and receiving steps for each additional CDP node identified; and
  - storing a list containing addresses of all identified CDP nodes.
2. The method of claim 1, wherein each signal is an SNMP message.
3. The method of claim 1, further comprising:
  - limiting a depth of a search for additional CDP nodes.
4. The method of claim 3, wherein limiting the depth of the search comprises:
  - establishing a recursion depth limit;
  - tracking the depth of recursion into the network from the first CDP node;
  - and
  - preventing any additional signals from being transmitted to newly discovered CDP nodes once the depth of recursion equals the recursion depth limit.
5. The method of claim 1, further comprising:
  - limiting a breadth of a search for additional CDP nodes.

6. The method of claim 5, wherein limiting the breadth of the search comprises:

establishing a maximum hop limit;

tracking a number of hops from the first CDP node; and

5 preventing any additional signals from being transmitted to newly discovered CDP nodes once the number of hops equals the maximum hop limit.

7. The method of claim 1, further comprising:

limiting a breadth and a depth of a search for the additional CDP nodes.

8. The method of claim 1, further comprising:

10 querying a user to provide the first CDP node information.

9. The method of claim 1, further comprising:

searching a database of nodes previously discovered by the network manager to identify the first CDP node.

10. The method of claim 1, further comprising:

15 performing the discovery process based upon a user's request or at fixed time intervals.

11. The method of claim 1, further comprising:

displaying the identified CDP nodes in a Graphical User Interface.

12. The method of claim 1, further comprising:

20 modifying the list in real time to facilitate real time display of identified CDP nodes as each CDP node is identified, wherein the real time display is presented as a graphical topology of the network on a Graphical User Interface.

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13. The method of claim 1, wherein the network manager is Network Node Manager.

14. The method of claim 1, wherein the list further comprises at least one of information on the interrelation of the identified CDP nodes, device identification  
5 information, and device type information.

15. A method for discovering CDP nodes of a network comprising:  
transmitting a SNMP message from a network manager to a first CDP  
node of the network to obtain information from the first CDP node;  
recursively transmitting a SNMP message to at least one additional CDP  
10 node of the network identified to the network manager by the information obtained  
from the first CDP node; and  
storing a list containing information of all identified CDP nodes.

16. A computer-based system that discovers Cisco Discovery Protocol (CDP)  
nodes in a network in real time comprising:

15 logic that transmits a signal from a network manager to a first CDP node  
of the network, wherein the signal requests information regarding additional CDP  
nodes known to the first CDP node;

logic that receives a response that identifies the additional CDP nodes  
known to the first CDP node;

20 logic that repeats the transmitting and receiving steps for each additional  
CDP node identified; and

logic that stores a list containing addresses of all identified CDP nodes.

17. The computer-based system of claim 16, further comprising:

logic that limits a depth and a breadth of a search for additional CDP nodes.

18. The computer-based system of claim 17, wherein limiting the depth of the search comprises:

- 5           logic that establishes a recursion depth limit;  
          logic that tracks the depth of recursion into the network from the first CDP node; and  
          logic that prevents any additional signals from being transmitted to newly discovered CDP nodes once the depth of recursion equals the recursion depth  
10       limit.

19. The computer-based system of claim 17, wherein limiting the breadth of the search comprises:

- logic that establishes a maximum hop limit;  
          logic that tracks a number of hops from the first CDP node; and  
15       logic that prevents any additional signals from being transmitted to newly discovered CDP nodes once the number of hops equals the maximum hop limit.

20. The computer-based system of claim 16, further comprising:

- logic that seeds the discovery process using at least one of querying a user to provide the first CDP node information and searching a database of nodes  
20       previously discovered by the network manager to identify the first CDP node.